ED 330 406 JC 910 195

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TITLE An Analysis of Developmental Students in Fall 1990. Report EA91-11.
INSTITUTION Prince George's Community Coll., Largo, MD. Office of Institutional Research and Analysis.
PUB DATE Apr 91
NOTE 31p.
PUB TYPE Statistical Data (110) -- Reports - Research/Technical (143) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Achievement; Academic Persistence; Basic Skills; College Role; Community Colleges; Comparative Analysis; Developmental Studies Programs; High Risk Students; Longitudinal Studies; Minimum Competency Testing; Predictor Variables; Remedial Mathematics; *Remedial Programs; Remedial Reading; *Student Characteristics; Two Year Colleges; *Two Year College Students
IDENTIFIERS *Maryland; Prince Georges Community College MD

ABSTRACT

Drawing from studies conducted at Prince George's Community College (PGCC) between 1989 and 1991, this report offers a profile of developmental students at PGCC and an analysis of the remedial education needs of fall 1990 first-time students. The first section of the report reviews findings from a number of statewide and institutional studies involving PGCC, indicating that, in fall 1988, 40% of the entering students statewide needed remediation in reading, 33% in English, and 39% in math; remedial course enrollments at PGCC increased between 1985 and 1989; fall 1980 entrants who had taken developmental courses were slightly less likely to graduate in the next eight years that those who had not; and, as of spring 1988, fall 1984 entrants who had taken at least one developmental course were just as likely to receive a degree from PGCC than non-developmental students, but less likely to have transferred to another school. The second section of the report provides an analysis of the remedial needs of first-time fall 1990 PGCC entrants as determined from English, math, and reading placement test results, comparing these data with the fall 1988 and 1989 cohorts. This section compares remedial student demographic characteristics with those of the general student body and reviews first-semester academic outcomes. The final section of the report examines all students taking at least one developmental course in fall 1990. Selected findings include the following: (1) among fall 1990 entrants tested, older students were more in need of remediation; (2) only 3% of the entering students were able to complete their remedial math work in one semester; and (3) over 33% of entering remedial students took credit courses during their first semester. Data tables, and the final report of a survey of developmental education practices and policies in Maryland community colleges, are appended. (JMC)

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AN ANALYSIS OF DEVELOPMENTAL STUDENTS IN FALL 1990

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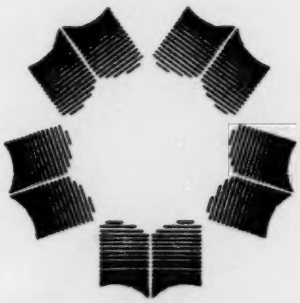

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Office of Institutional Research and Analysis

Kay R. McCoy

Report EA91-11

April 1991

SC 018 775

PRINCE GEORGE'S COMMUNITY COLLEGE
Office of Institutional Research and Analysis

AN ANALYSIS OF DEVELOPMENTAL STUDENTS IN FALL 1990

Enrollment Analysis EA91-11
April 1991

Introduction

With the increasing nationwide focus on outcomes assessment, retention of students, and the lack of preparedness of college students, it is only natural that a close look be taken at those students needing and taking remedial ("developmental") courses.

The state of Maryland has long been aware of the importance of developmental education and, in its *Statewide Plan for Postsecondary Education* issued in July 1978, assigned the main responsibility for developmental education to the community colleges. In response to that plan, SBCC authorized the first large-scale study of developmental education in Maryland's community colleges. This study, by Dorothy Linthicum, looked at the structure of and success of developmental education departments around the state and was published in September 1979. (A summary of that study is in the appendix.)

In the summer of 1985 the State Board for Community Colleges established an 18 member committee called the Committee on the Future of Maryland Community Colleges; that committee issued its final report titled *Blueprint for Quality* in September 1986. Seven of the 57 recommendations made in this report concerned developmental education. They were:

Recommendation 25. That community colleges continue to have a primary responsibility for remedial education within higher education in the State of Maryland.

Recommendation 26. That community colleges determine basic competencies required for enrollment in academic credit courses, restricting entry to students who demonstrate preparedness.

Recommendation 27. That community colleges adopt policies requiring mandatory skill assessment, course placement, and academic advising for all students.

Recommendation 28. That community college assessment standards be directly related to the skill level required for success in all introductory college-level courses offered by the institution.

Recommendation 29. That community colleges evaluate their remedial activities and be able to show that their efforts make a difference in student success and in the quality of education for all students.

Recommendation 30. That the State Board for Community Colleges provide statewide leadership for remedial education by sponsoring workshops on remedial education and by providing information and other assistance to institutions attempting to address the remedial needs of their students.

Recommendation 31. That the State Board for Community Colleges, in cooperation with the community colleges, expand the statewide information system to include data about remedial students and their performance.

One response to the *Blueprint for Quality* was the formation of a committee under the auspices of the Maryland Community College Research Group (MCCRG) in February 1989 to look at developmental programs among the community colleges in an effort to establish some common definitions and performance indicators and assist in research methodology for studying the impact of developmental studies. The final report of this committee is appended to this report.

Here at PGCC, studying the success of developmental education is targeted in our *Institutional Goals and Objectives* as well as the accountability plan which is being developed for the Maryland Higher Education Commission. In the research office, separating developmental students as a subgroup has become a part of many of our overall studies. This report is a compilation of the data made available from these and other projects completed by this office over the past three years.

Placement Testing at PGCC

Credit students entering Prince George's Community College are required to take the Comparative Guidance and Placement (CGP) Test upon completing the application for admission. The College Catalog states the following:

> Every student applying for admission will be required to take a placement test to measure reading comprehension, writing, and mathematics skills. Exceptions to this requirement may be made for the following:
>
> 1. Adult learners who wish to take no more than two personal enrichment courses in the semester for which admission is sought, providing no test-score prerequisite applies to the course(s).
>
> 2. Transfer students who have previously completed all general education requirements and who have achieved sophomore standing in the degree program for which admission is sought.

SUMMARY OF EARLIER RESEARCH OFFICE STUDIES OF DEVELOPMENTAL EDUCATION AT PGCC

Southern Regional Education Board

In September 1989 the Southern Regional Education Board (SREB) asked the College to participate in a *Survey of Remedial Education in Institutions of Higher Education in the SREB States*. The survey was completed by the Office of Institutional Research and Analysis with the cooperation of the Dean of Educational Development and the Student Testing Office. In order to collect end-of-semester and retention data, SREB requested use of the Fall 1988 students as the cohort to study. The survey focused to a large degree on qualitative information in order for SREB to gain an understanding of the type of developmental activities and programs provided by the participating colleges.

The quantitative data reported included a profile of the 948 first-time students enrolled in at least one developmental course during Fall 1988. Fifty-seven percent of those students were female; seventy-two percent were black. The average fall-to-fall retention (over 3 years, Fall 85 - Fall 88) of fall first-time students who took at least one developmental course was somewhat higher than that for all first-time fall students. Note that "all first-time fall students" included those not tested as well as those needing or taking developmental courses. However, no controls for student goals or full- or part-time attendance were employed; both have been shown to be related to term-to-term retention.

The Developmental Education Association of Maryland

During the Fall 1989 semester the College was also asked to participate in another survey of remedial education - this time targeting Maryland community colleges and sponsored by the Developmental Education Association of Maryland (DEAM). The DEAM survey was patterned somewhat after the SREB survey with an attempt to tailor it to the community college student. This survey was completed by the Dean of Educational Development with the quantitative student data provided by the Office of Institutional Research and Analysis.

The percent of Fall 1988 entrants (who were tested) who needed remediation in each of the three skill areas were as follows:

Reading	40%
English	33%
Math	39%

Fall-to-spring and fall-to-fall retention of various cohorts of Fall 1988 students were reported to DEAM. An analysis of the data seemed to indicate that remedial students who successfully completed at least one developmental course were more likely to return both

in the spring and in the following fall than other students. However, decisions to continue reflect a multitude of influences, and multivariate analysis would be necessary to ascertain the relative contribution of each to student persistence.

Fall 1989 Review of PGCC Students Taking Developmental Courses

The research office compiled descriptive data on remedial students for a Fall 1989 briefing with representatives of the County school system. The review found an increase in course enrollments in all three skill areas between 1985 and 1989. The profile data illustrated the over-representation of Prince George's County High School graduates, students under 21, and black students compared to the college population as a whole.

Degree Attainment of First Time Fall Students After Eight Years

Studies of Fall 1980 and Fall 1981 first-time entrants over a period of 8 years or 16 semesters (summers were not included) have provided some limited findings about A.A. attainment of developmental students. The data provided here must be used carefully, and are provided only for the purpose of comparing students who took developmental courses with those who did not. Due to the lack of goal information for the students entering in the early Eighties, this analysis includes all entering students, including those with no intention of working toward an A.A..

Chapter 3 of the *Student Outcomes Performance Accountability Report* (OIRA, November 1988) reported findings of the A.A. attainment of the Fall 1980 first-time students. Nearly one-fourth of the students who had attained an A.A. degree in eight years had taken at least one developmental course. However, Fall 1980 entrants who had taken developmental courses were slightly less likely to graduate than those who had not. This study was updated for Fall 1981 entrants; the table below shows the A.A. attainment of those students by number of developmental courses taken.

A.A. Attainment by Number of Developmental Courses Taken
Fall 1981 Entrants After Eight Years

Developmental Courses Taken	Entered in Fall 1981	Graduated by Spring 1989	Percent Graduated
None	2,713	357	13%
One	457	56	12%
Two	323	23	7%
Three or more	420	32	8%

Outcome Indicators for Fall 1984 Entrants After Four Years

In Spring 1988 Maryland community colleges surveyed their entering students from 1984 to evaluate their progress and achievements in the four years that had passed. The research office published an extensive report looking at award attainers at Maryland community colleges based on this survey (OIRA Report RB91-1). Students who took at least one developmental course during their attendance at their community college were separated out for analysis. What follows is a summary of that data.

Selected Outcome Indicators
Fall 1984 Entrants of Maryland Community Colleges
As of Spring 1988

	State	PGCC
Any Award at Initial Community College		
At least one developmental course	*11%*	*9%*
No developmental course	12%	9%
Transfer to Another School		
At least one developmental course	*31%*	*22%*
No developmental course	33%	34%
Any Award at Com Col/Transfer School		
At least one developmental course	*13%*	*12%*
No developmental course	16%	13%

As with the data in previous sections, this information must be used carefully. These percentages are based on all entering students regardless of goal, curriculum, or FT/PT status. The table above illustrates that PGCC Fall 1984 entering students who have taken at least one developmental course were just as likely to receive a degree (from PGCC) within four years as students who had not taken any developmental courses. However, the developmental students were less likely to have transferred to another school. The overall proportion earning any award - either at PGCC or at a transfer institution - was 12 percent for students with developmental coursework and 13 percent for those not taking any developmental courses.

ANALYSIS OF REMEDIAL NEEDS OF FIRST-TIME ENTRANTS IN FALL 1990

In this report two groups of students enrolled in Fall 1990 will be examined. In this section, the profiles and academic performance of first-time college students will be reviewed. In the next section, a similar analysis will be reported for all students enrolled in a developmental course in Fall 1990, regardless of when they began their studies.

How many students needed remedial help?

The Comparative Guidance and Placement Test does not in and of itself determine whether or not a student needs remediation, but is used by the various departments to set prerequisites for taking their credit courses. Not all credit departments have CGP score prerequisites for taking their courses, and, of the ones that do, not all use the same score. The CGP test provides scores for students in three separate areas -- English, reading and math. For purposes of this report an entering student was considered to be a remedial student if he/she did not meet the CGP score requirements for the common introductory courses meeting the college's general education requirements in any of those skill areas. The specific courses used were Math 112, English 101, and any social science course for the reading prerequisite.

If the student feels that the test results are not representative of their skills, they are allowed to take one or more retests. The most recent test taken was considered in determining whether the student needed remediation in any of the skill areas.

There were 2,619 first-time college students enrolled at PGCC as of the third week in Fall 1990. Eighty-six percent of these first-timers had taken the CGP (or a comparable) test in at least one skill area. Approximately two-fifths of the entering students who were tested in each area required remediation in that area. The table below shows the trends in all three areas over the past three years. (The number tested is shown in parentheses.)

Percent of Those Tested Who Needed Remediation
Entering Students, as of the Third Week, Fall 1988 - Fall 1990

Developmental Area	Fall 1988	Fall 1989	Fall 1990
Developmental English	33% (2,369)	37% (2,179)	39% (2,148)
Developmental Reading	40% (2,334)	42% (2,160)	41% (2,139)
Developmental Math	39% (2,360)	42% (2,192)	42% (2,195)

Of the 2,081 Fall 1990 first-time students who were evaluated in all three skill areas, **60 percent needed remediation in at least one area.** One-fifth of the tested students needed remediation in all three areas.

Percent of Entering Students Tested in All Three Areas Requiring At Least One Developmental Course

	Number Tested in All Three Areas	Percent Who Needed Remediation
Fall 1990	2,081	60%
Fall 1989	2,063	61%
Fall 1988	2,122	57%

Are certain students more at risk than others?

The demographic characteristics of the cohort of 2,081 Fall 1990 entering students who were evaluated in all three skill areas were analyzed in two ways. In this section, in an effort to ascertain whether certain sub-groups of entering students were more at risk than others, the demographic data were examined by the percent of students in each category needing remediation. In the next section, a demographic profile of students who needed remediation was created by looking at the percent of students needing remediation who fell into each category. Tables 1 and 2 in the appendix display this demographic data in both of these ways.

According to Table 1, there were minor differences in the remediation needs of males and females; 61 percent of the women tested needed remedial work compared to 58 percent of the males. Older students were more likely to need remedial help; 77 percent of the students over 26 scored below the cut-off point in at least one area, compared to 57 percent of the students between 16 and 25. Seventy-nine percent of the black students tested needed remediation in at least one area; one-third needed remediation in all three areas. In comparison, 36 percent of the white students needed remediation in at least one area; 7 percent in all three areas. The needs of the other racial/ethnic groups fell in between. Sixty-seven percent of the part-time students needed remedial help in at least one area compared to 53 percent of the full-time students.

There has been some speculation that students enrolling at PGCC from District of Columbia high schools might be less prepared than other students. This was found to be true. In Fall 1990, 87 percent (98/113) of the entering students who graduated from DC schools needed remedial work in at least one area; thirty-five percent needed remediation in all three areas. Students graduating from Prince George's County public high schools were somewhat better prepared -- 61 percent needed remediation in at least one area. This

difference might be even more striking if there were a way to account for DC to Prince George's County population migration. It is unknown how many Prince George's County High School graduates received most of their education from DC public schools.

How do students needing remediation differ from other students?

Table 2 shows that 59 percent of the remedial students were female compared to 56 percent of the "prepared students." Seventy percent of the remedial students were black; 29 percent of the prepared students were black. Nearly three-fourths of the entering Fall 1990 remedial students were under 20, compared to 81 percent of the prepared students. The difference was made up in the over 25 age group -- 17 percent of the remedial students compared to 7 percent of the prepared students. Fifty-four percent of the remedial students were part-time; 39 percent of the prepared students were part-time. Remedial students were more likely to set a goal of earning an A.A. degree and were less likely to be preparing for transfer to another college.

Students who had not been tested in all three skill areas were comparatively older, more likely to have graduated from an out-of-state high school (other than D.C.), less likely to be seeking a degree or to transfer to another school and more likely to be taking only one or two courses.

How well did students needing remediation do in Fall 1990?

That seems like an easy enough question to answer, but a number of decisions had to be made before proceeding with an analysis of the academic performance of these remedial students. First of all, a decision was made to look at their performance in developmental courses separate from their performance in any credit courses which may have been taken concurrently.

But -- how to analyze the performance in developmental courses? Was there merit in looking at the achievement of the different skill levels (P1 - P4) within the developmental sequence or only at the completion of the sequence? In order to make that decision, a quick analysis was done of the grades in the developmental courses. Fewer than half of the Fall 1990 entrants who required remediation and were taking developmental courses in any of the three skill areas achieved the passing level required for registering in credit courses. Of the 539 entering students who required remediation in math and took developmental math, only 3 percent achieved the skill level necessary (P4) to take Math 112 in the spring semester. Only 22 percent were in courses in which it was possible to achieve a P4 and exit the developmental sequence in one semester. Therefore, it was decided that for purposes of within-term analysis it was necessary to look at levels of achievement within the developmental sequence. For a future analysis of how developmental students perform over several semesters, completion of the developmental sequence will be a more important indicator of academic success.

Developmental Math. A student who completes the developmental math sequence successfully will have learned the equivalent of the first year of high school algebra. Developmental math courses range from DVM001 which teaches only basic arithmetic (addition, subtraction, multiplication, division, fractions, and decimals) to DVM007 which covers all of the first year of high school algebra in one semester. Students are placed in these courses based on their CGP score and high school math experience. Students receive a P level grade depending on how many math skills they master. What level grade they achieve depends on their starting point as well as their work and motivation. For example, a student in DVM001 can only achieve a P1 because that is all that is taught in that course. The list below shows the levels possible in each developmental math course and what skills are necessary to reach each passing level.

Grading in Developmental Math

Pass Level	Math Skills Learned
P1 -	Addition, Subtraction, Multiplication, Division, Fractions, and Decimals
P2 -	Ratios, percents, introduction to algebra
P3 -	measurement conversion, geometry, business/statistical applications
P -	Algebra through factoring
P4 -	First year high school algebra

DVM001	Basic Arithmetic	P1
DVM003	Arithmetic Skills and Concepts	P1 P2 P3
DVM004	Basic Algebra, Part I	P
DVM005	Developmental Mathematics (self-paced)	P1 P2 P3 P P4
DVM006	Basic Algebra, Part II	P4
DVM007	Introduction to College Algebra	P P4

In Fall 1990, 539 entering students were tested, needed remedial math and took a developmental math course. The placement of the students in the various developmental math courses gives a rough picture of the preparedness of the developmental math students who entered the college in Fall 1990. Twenty-six percent of these 539 developmental math students were placed in DVM001 to learn basic arithmetic. One-fifth (27 of 142) failed the course. Sixty-three percent passed the course with a P1 or better. (Occasionally students are allowed to work beyond the normal class material when it is discovered that they were placed in a course below their skill level.) Forty-four students (or 8 percent of the total) were placed in DVM007, the most advanced developmental math course. Less than one-third of those students completed DVM007 with a P4.

Overall, 55 percent of the entering students needing and taking developmental math "completed" their course with the highest P grade allowed for the course. The following table shows the number of students who took each of the developmental math courses and the percent who completed each.

Percent of Entering Students Tested and Needing Remediation in Math
Who Completed Their Developmental Math Course
Fall 1990

Course	Number in Course	Percent Who Completed
DVM001	142	63%
DVM003	235	53%
DVM004	42	50%
DVM005	75	63%*
DVM006	1	0%
DVM007	44	30%
Overall	539	55%

*DVM005 is a self-paced course allowing the achievement of any P level grade within one semester. Thirty-nine percent of the students received a P1, twelve percent received a P2, twelve percent received a P3 and none of the 75 received a P4.

The table on the next page shows the overall grade distribution in developmental math for Fall 1990. Twenty-eight percent had failed their developmental math course. By the end of the semester only 15 (3% of the 539 students taking developmental math) had achieved a P4 level and were ready to take Math 112. The table above shows that only 120 (22% of 539) students were placed in a course where it was possible to earn a P4 and thus complete their developmental math sequence.

Grades Awarded in Developmental Math
To Entering Students Who were Tested and Needed Remediation in Math
Fall 1990

Grades	Number	Percent
P1	110	20%
P2	20	4%
P3	142	26%
P	19	4%
P4	15	3%
F	152	28%
Withdrew	62	12%
Incomplete or TP	19	4%
Total Fall Entrants Taking Developmental Math	539	100%

Developmental English. In order to register for English 101, students must score a 46 or higher on the CGP test (the required score will be changed to 48 in Fall 1991), or must achieve a P2 in DVE001, or must pass English 100. Students who are not prepared to enter English 101 are placed in one of two developmental English courses or a preliminary English course depending on their CGP scores. According to the college catalog, DLS003 is designed to teach a student how to write clear, concise sentences; DVE001, how to write clear paragraphs and use correct grammar. English 100 is an introduction to composition and includes short essay writing in addition to the skills taught in DVE001. A student placed in the lowest course in the developmental English sequence (DLS003) is graded on a pass/fail basis; a student receiving a P in that course must then take DVE001. A student achieving a P2 in DVE001 can then register in English 101; a student achieving a P1 must register in English 100 and pass that course before taking English 101.

In Fall 1990, 507 students were identified as needing remedial English and took a developmental English course. Only 76 students (15%) achieved a P2 in DVE001 and, therefore, completed the developmental English sequence in one semester. An additional one-third of the students achieved a P1 in DVE001 and were eligible to take EGL100 in the Spring 1991 term. Twenty-two percent of the 507 students failed their developmental English course. The table on the next page displays the developmental English courses and the Fall 1990 entering students' grades.

Grades Awarded in Developmental English
To Entering Students Who were Tested and Needed Remediation in English

Course	Number	Percent
DLS003	*139*	*100%*
P	90	65%
F	40	29%
Withdrew	7	5%
TP	2	1%
DVE001	*368*	*100%*
P2	76	21%
P1	172	47%
F	70	19%
Withdrew	37	10%
Incomplete or TP	13	4%
Total Fall Entrants Taking Developmental English	*507*	*100%*
Completed Course	338	67%
Did Not Complete	169	33%

In using course placement to describe the (lack of) preparedness of the Fall 1990 entering students in English, the table above shows that 27 percent (139/507) of the students who needed and took developmental English were placed in DLS003, the preparatory course to DVE001. These students indicated through the CGP test that they needed remedial work in order to write a proper sentence. Forty (29%) of those 139 students in DLS003 failed the course.

Developmental Reading. There are two developmental reading courses -- DVR005 is designed for vocabulary enhancement and reading comprehension; DVR006 helps to develop reading and study skills. Depending on their exact CGP test score, students needing remediation in reading are placed in one of these two courses. In order to meet the prerequisites for the social science courses, a student must achieve a P2 in DVR005 or a P in DVR006. A student receiving a P1 in DVR005 can then take DVR006.

Of the 479 Fall 1990 entering students who needed and took developmental reading, 43 percent completed the developmental reading sequence in one semester and, therefore, met the requirements for taking a social science course in Spring 1991. In addition, nearly 20 percent of the students achieved a P1 in DVR005 and were eligible to take DVR006. Thus, a total of 62 percent of the students completed their developmental reading course. One-fifth of the students needing and taking developmental reading failed the developmental

reading course they were placed in. The table below shows the grade distribution in the two developmental reading courses.

Grades Awarded in Developmental Reading
To Entering Students Who were Tested and Needed Remediation in Reading

Course	Number	Percent
DVR005	*221*	*100%*
P2	45	20%
P1	94	43%
P	7	3%
F	39	18%
Withdrew	15	7%
TP	21	10%
DVR006	*258*	*100%*
P	159	62%
F	56	22%
Withdrew	22	9%
TP	21	8%
Total Fall Entrants Taking Developmental Reading	*479*	*100%*
Completed Course	298	62%
Did Not Complete	181	38%

Nearly half of the Fall 1990 students identified as needing developmental reading and who took a developmental reading course in Fall 1990, were placed in the introductory developmental reading course (DVR005). Thirty-nine (18%) of those 221 students failed the course. One-fifth of the students placed in DVR005 achieved a P2 which meets the prerequisites for the introductory social sciences courses.

Developmental Courses (overall). As of the end of the Fall 1990 semester, 2,138 of the 2,643 Fall 1990 entering students had been tested in all three skill areas. Of those, 1,253 were identified as needing remediation in at least one skill area. Sixty-eight percent (856) of these Fall 1990 entering students identified as needing remediation in at least one skill area actually took at least one developmental course in Fall 1990. In analyzing the grades, passing developmental courses was defined as earning the minimum "P" level necessary to proceed to the next appropriate course in the sequence. Thirty percent (255) of those students were not able to pass any of the developmental courses they took. Slightly over half (449) passed all the developmental courses they took in Fall 1990. Perhaps the most notable finding was that one-third of those identified as needing remediation did not take any developmental courses during their first semester at PGCC.

Credit Courses. Although many credit courses have prerequisites which require the student to score above the specified cut-off point on the CGP test evaluating the skills in the relevant area, or to have completed the developmental sequence in that skill area, remedial students are allowed to enroll in some credit courses concurrently with or even before taking their developmental courses. The table below shows the number of remedial students who took credit courses.

Attempted Courses by Type
For Fall 1990 Entrants Tested In All Three Areas
End-of-Semester Statistics

		Took Developmental Course(s)		Took Credit Course(s)	
	Number	Number	Percent	Number	Percent
Students Needing Remediation					
in one area	415	206	50%	394	95%
in two areas	402	280	70%	322	80%
in three areas	436	370	85%	167	38%
Students Not Needing Remediation	885	36	4%	884	99%

Seventy percent of the entering students with remedial needs took credit courses along with or instead of developmental courses during Fall 1990. Ninety-five percent of the students who required remediation in one area took at least one credit course. Over one-third of these entering students who were identified as needing remediation in all three areas took at least one credit course in their first semester.

ANALYSIS OF ALL STUDENTS TAKING AT LEAST ONE DEVELOPMENTAL COURSE IN FALL 1990

Obviously, judging by the number of students who do not complete their remedial studies in one semester, there are many students taking developmental courses during any one semester besides the entering students. This section of this report will provide analysis of students enrolled in at least one developmental course during Fall 1990.

Who are the students who took developmental courses?

Fifteen percent of the 13,087 students enrolled at PGCC in Fall 1990 took at least one developmental course. Table 3 in the appendix displays the percent of students in various demographic categories who took at least one developmental course. Approximately one-fifth of the black and the Native American students took a developmental course, compared to 14 percent of the Hispanic, 8 percent of the white and 6 percent of the Asian students. Over one-fourth of the students under age 20 took at least one developmental

developmental course in Fall 1990 compared to less than 12 percent of any other age group. Whether a student was male or female does not seem to have any bearing on the likelihood of their taking developmental courses.

The profile table (Table 4 in the appendix) shows that the 1,986 developmental students were three-quarters black, over half under 20 years old, and 62 percent female. Keep in mind that these 1,986 students are students who **took** at least one developmental course during Fall 1990, regardless of their CGP scores or when they entered the college. Table 4 also shows the comparison with students not taking any developmental courses.

How did the developmental students do in Fall 1990?

As of the end of the Fall 1990 semester there were 2,898 course enrollments in developmental studies. One-half of those enrollments were in a developmental math course. The remainder were split nearly evenly between developmental English and reading.

Developmental Math. Of the 1,443 developmental math students, 12 percent completed their remediation (achieved a P4 grade) during the Fall 1990 semester. Twenty-three percent failed the developmental course they took in Fall 1990, 13 percent withdrew from their developmental math course, and the rest achieved some level of a passing grade. The table below shows the distribution of grades in developmental math courses.

Grades Awarded in Developmental Math
To All Developmental Math Students
Fall 1990

Grades	Number	Percent
P1	198	14%
P2	66	5%
P3	289	20%
P	145	10%
P4	168	12%
F	325	23%
Withdrew	186	13%
Incomplete or TP	64	4%
Total Developmental Math Students	1,443	100%

The distribution of students among the courses gives some indication of the level of preparedness of the developmental math students at the beginning of the semester. Forty-five percent of the developmental math students were placed in courses in which a P4 grade was possible (including DVM005, the self-paced course, in which it is possible, but not

expected for a student to achieve a P4). Thus a majority (55%) were enrolled in courses in which successful completion would qualify them only for a higher level developmental math course; it was not possible for these students to complete remediation in mathematics during Fall 1990. Fourteen percent of the students who took developmental math in Fall 1990 were placed in DVM001, the basic arithmetic course. The table below shows the distribution of students in the different courses and the percent who completed the course. A course completion was considered the highest P grade awarded in the course.

Percent of Students
Who Completed Their Developmental Math Course
Fall 1990

Course	Number in Course	Percent Who Completed
DVM001	198	67%
DVM003	410	56%
DVM004	184	62%
DVM005	323	64%*
DVM006	62	32%
DVM007	226	45%
Overall	1,443	56%

*DVM005 is self-paced allowing the achievement of any P level grade within one semester. Twenty-five percent received a P1, fourteen percent received a P2, thirteen percent received a P3, 7 percent received a P, and 4 percent received a P4.

Developmental English. The Fall 1990 end-of-semester course enrollment count included 765 students in developmental English courses. Three-fourths of these were in DVE001; one-fourth in DLS003. Eighteen percent (138/765) of the students who took developmental English completed their remediation in English during Fall 1990 by achieving a P2 in DVE001. An additional 33 percent of the students who were awarded a P1 in DVE001 must take EGL100 before taking EGL101. Sixteen percent made a P in DLS003 and must take DVE001 and possibly also EGL100. The table on the next page completes the picture of the grade distribution in developmental English courses.

Grades Awarded in Developmental English
Fall 1990

Course	Number	Percent
DLS003	*183*	*100%*
P	119	65%
F	51	28%
Withdrew	10	5%
TP	2	1%
Audit	1	1%
DVE001	*582*	*100%*
P2	138	24%
P1	256	44%
F	117	20%
Withdrew	50	9%
Incomplete or TP	20	3%
No Grade	1	<1%
Total Developmental English Students	*765*	*100%*
Completed Course	513	67%
Did Not Complete	252	33%

Developmental Reading. A total of 690 students took developmental reading in Fall 1990. Fifty-seven percent were placed in DVR006 and 43 percent in DVR005. Slightly more than two-fifths completed the developmental reading sequence (according to the prerequisites for a social science course). One-fifth received a P1 in DVR005 in preparation for taking DVR006. Another fifth failed their developmental reading course. The table below shows the Fall 1990 grade distribution in developmental reading courses.

Grades Awarded in Developmental Reading
Fall 1990

Course	Number	Percent
DVR005	*294*	*100%*
P2	61	21%
P1	128	44%
P	7	2%
F	54	18%
Withdrew	22	7%
TP	22	7%

(table continued) Course	Number	Percent
DVR006	*396*	*100%*
P	232	59%
F	93	23%
Withdrew	35	9%
TP	36	9%
Total Developmental Reading Students	*690*	*100%*
Completed Course	421	61%
Did Not Complete	269	39%

Summary

An attempt was made during this study to identify and describe "the remedial students". The most obvious finding was that it is impossible to do so. The students needing remedial work in the different skill areas are simply too different to lump together as a homogeneous group. There is considerable difference, for instance, between a student who needs to brush up on math skills before taking college math courses and a student who cannot read or add. In order to do any justice to a study about the impact of the "developmental program" it will be necessary to do an in-depth study of students needing remedial work in each skill area separately. These three studies will focus on the preparedness of the students upon entry to the college, and will analyze the time taken by the students to complete their remedial work and their academic performance after remediation is completed.

This study, however, did show some unexpected findings. Among Fall 1990 entrants tested in all 3 areas, older students were more likely to need remedial work than younger students. (Will further study show these students to be the ones who only need to brush up on math skills?) Among entering students, only 3 percent were able to complete their remedial work in math in one semester; only 15 percent completed their remediation in English in one semester. Over one-third of the entering students who needed remediation in all three areas enrolled in credit courses in their first semester.

Providing remedial education has evolved into a primary mission of the community college. To better understand the needs and performance of these students, and to meet mandated accountability requirements, the research office will make continuing analyses of the developmental program.

Kay R. McCoy
Supervisor of Institutional Research

APPENDIX

FIRST-TIME ENTRANTS IN FALL 1990
TESTED IN ALL AREAS
AS OF THE THIRD WEEK

	Tested In All Areas Number	Remediation Needed in at Least One Area Number	Percent
Headcount	2,081	1,246	60%
Black	1,116	877	79%
White	816	291	36%
Asian	86	43	50%
Hispanic	54	31	57%
Native American	9	4	44%
Male	872	506	58%
Female	1,209	740	61%
Unknown	7	4	57%
16-20	1,578	900	57%
21-25	224	133	59%
26-35	182	139	76%
36-59	90	70	78%
60 and over	0	0	NA
Full-time	1,076	569	53%
Part-time	1,005	677	67%
PG Public Schools	1,400	849	61%
PG Private Schools	155	55	35%
Other MD Schools	118	67	57%
DC Schools	113	98	87%
Other Out of State	193	111	58%
GED	80	54	68%
Not High School Grad	22	12	55%
Expl New Career	240	170	71%
Prep Immed Entry	307	236	77%
Prep for Transfer	1,347	695	52%
Update Skills	87	67	77%
Self Enrichment	89	70	79%
Courses	810	413	51%
Certificate	290	215	74%
AA	980	617	63%

Table 1

FIRST-TIME ENTRANTS IN FALL 1990
TESTED IN ALL AREAS
AS OF THE THIRD WEEK

	No Remediation Needed		Remediation Needed in at Least One Area	
	Number	Percent	Number	Percent
Headcount	835	100%	1,246	100%
Black	239	29%	877	70%
White	525	63%	291	23%
Asian	43	5%	43	3%
Hispanic	23	3%	31	2%
Native American	5	1%	4	< 1%
Male	366	44%	506	41%
Female	469	56%	740	59%
Unknown	3	< 1%	4	< 1%
16-20	678	81%	900	72%
21-25	91	11%	133	11%
26-35	43	5%	139	11%
36-59	20	2%	70	6%
60 and over	0	0%	0	0%
Full-time	507	61%	569	46%
Part-time	328	39%	677	54%
PG Public Schools	551	66%	849	68%
PG Private Schools	100	12%	55	4%
Other MD Schools	51	6%	67	5%
DC Schools	15	2%	98	8%
Other Out of State	82	10%	111	9%
GED	26	3%	54	4%
Not High School Grad	10	1%	12	1%
Expl New Career	70	8%	170	14%
Prep Immed Entry	71	9%	236	19%
Prep for Transfer	652	78%	695	56%
Update Skills	20	2%	67	5%
Self Enrichment	19	2%	70	6%
Courses	397	48%	413	33%
Certificate	75	9%	215	17%
AA	363	43%	617	50%

Table 2

STUDENTS IN DEVELOPMENTAL COURSES
FALL 1990

	Enrollment	Students Enrolled in at Least One Developmental Course in Fall 1990	
		Number	Percent
Headcount	13,087	1,986	15%
Black	6,337	1,429	23%
White	5,720	463	8%
Asian	668	40	6%
Hispanic	304	43	14%
Native American	58	11	19%
Male	4,944	763	15%
Female	8,143	1,223	15%
Unknown	20	5	25%
16-20	4,205	1,057	25%
21-25	3,115	326	10%
26-35	3,170	373	12%
36-59	2,201	218	10%
60 and over	376	7	2%
Part-time	9,706	1,178	12%
Full-time	3,381	808	24%
PG Public Schools	6,171	1,195	19%
PG Private Schools	808	58	7%
Other MD Schools	890	89	10%
DC Schools	1,160	186	16%
Other Out of State	3,356	321	10%
GED	523	115	22%
Not High School Grad	179	22	12%
Expl New Career	2,051	302	15%
Prep Immed Entry	1,807	374	21%
Prep for Transfer	6,461	1,045	16%
Update Skills	1,510	132	9%
Self Enrichment	1,178	126	11%
Courses	4,441	539	12%
Certificate	1,551	281	18%
AA	7,091	1,166	16%

Table 3

DEVELOPMENTAL STUDENT PROFILE
FALL 1990

	Students Enrolled in at Least One Developmental Course in Fall 1990		Students Not Enrolled in Developmental Courses in Fall 1990	
	Number	**Percent**	**Number**	**Percent**
Headcount	1,986	100%	11,101	100%
Black	1,429	72%	4,908	44%
White	463	23%	5,257	47%
Asian	40	2%	628	6%
Hispanic	43	2%	261	2%
Native American	11	1%	47	< 1%
Male	763	38%	4,181	38%
Female	1,223	62%	6,920	62%
Unknown	5	< 1%	15	< 1%
16-20	1,057	53%	3,148	28%
21-25	326	16%	2,789	25%
26-35	373	19%	2,797	25%
36-59	218	11%	1,983	18%
60 and over	7	< 1%	369	3%
Part-time	1,178	59%	8,528	77%
Full-time	808	41%	2,573	23%
PG Public Schools	1,195	60%	4,976	45%
PG Private Schools	58	3%	750	7%
Other MD Schools	89	4%	801	7%
DC Schools	186	9%	974	9%
Other Out of State	321	16%	3,035	27%
GED	115	6%	408	4%
Not High School Grad	22	1%	157	1%
Expl New Career	302	15%	1,749	16%
Prep Immed Entry	374	19%	1,433	13%
Prep for Transfer	1,045	53%	5,416	49%
Update Skills	132	7%	1,378	12%
Self Enrichment	126	6%	1,052	10%
Courses	539	27%	3,902	35%
Certificate	281	14%	1,270	11%
AA	1,166	59%	5,925	53%

Table 4

Summary of Report Statewide Assessment of Developmental/Remedial Education at Maryland Community Colleges.
(from Resources in Education, 1980 Annual Cumulation, Volume 15, Part One)

ED 175 514 JC 790 505

Linthicum, Dorothy S.

Statewide Assessment of Developmental/-Remedial Education at Maryland Community Colleges.

Maryland State Board for Community Colleges, Annapolis.

Pub Date—Sep 79

Note—100p.

Pub Type— Reports - Research (143)

EDRS Price - MF01/PC04 Plus Postage.

Descriptors—Academic Achievement, Adult Education, College Credits, Community Colleges, Costs, Curriculum Development, *Developmental Programs, Enrollment, *Junior Colleges, Junior College Students, Program Administration Program Evaluation, *Remedial Courses *Remedial Instruction, Remedial Programs, *State Surveys, Statewide Planning

Identifiers—*Maryland

A study was conducted to determine the scope and characteristics of developmental/remedial activities in Maryland's 17 community colleges in terms of objectives and goals, courses and activities, student information, costs and revenues, and administration and organization. The study revealed: (1) 15 colleges offered developmental education for credit in English and mathematics; (2) 15 colleges offered courses in reading and/or study skills, and provided tutoring, counseling, and self-paced instruction; (3) total enrollment in remedial courses in fiscal year (FY) 1978 was more than 42,000–30,000 in credit courses and 12,000 in continuing education courses; (4) direct costs for FY 1978 totaled about $3.4 million (direct remedial instructional cost for each remedial full-time equivalent (FTE) student statewide was $931); and (5) developmental programs tended to be decentralized, with most programs conducted within academic departments. Another aspect of the study involved measuring a sample of students enrolled in developmental English courses at eight colleges against the success of a sample of students enrolled in English 101. Developmental students tended to complete fewer college-level English courses and make lower grades than the control group. The study report considers the implications of the findings in terms of placement, open admissions, professional development, organizational structure, evaluation, and funding. (DR)

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A Survey of Developmental Education Policies and Practices in Maryland Community Colleges

Barbara McClinton and Donna McKusick

Educators and the general public alike have become interested in developmental education. This interest may be seen in national reports on the shortcomings of schools, in the reluctance of legislators to reimburse colleges for teaching basic skills "which ought to have been mastered in elementary and secondary schools," in the growth of organizations such as the National Association for Developmental Education and the Developmental Education Association of Maryland (DEAM), in colleges' efforts to improve their developmental programs, in Maryland's Blueprint for Quality published in 1987, and in the recent addition of data about developmental students to Maryland's state-wide enrollment information system. This last item – the decision to add data about developmental students to the annual enrollment information report – prompted the officers of DEAM to conduct a survey of policies, practices, and data about developmental education at Maryland's community colleges.

Results from the DEAM survey indicate that most Maryland community colleges:

- Required assessment for entering students who take certain courses or a certain number of credits;
- Required placement in developmental courses for students identified as needing them;
- Restricted simultaneous enrollment in developmental courses and regular (credit) courses in other disciplines;
- Required exit tests (given to all students in all sections) for students to pass developmental courses;
- Evaluated their developmental programs in several ways.

Less consensus among the colleges was found in the following four areas:

- The colleges used a wide selection of standardized and in-house placement tests (but based on national norms, the standards for placing students in developmental courses seemed to be similar at most colleges).
- Among entering students, the propor-

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tion identified as needing developmental work ranged from 10% to 71% in reading; from 14% to 55% in writing; and from 24% to 87% in math.

- Completion rates (percentage of students who passed developmental courses) varied widely, both within and among colleges. For example, in fall 1989 the pass rates for developmental English (higher level course, if two or more courses were offered) ranged from 33% to 85%.
- Retention data were provided by only six colleges. Among these colleges, retention rates generally were similar for entering students identified as needing developmental work and other entering students.

The remainder of this article briefly describes the events leading up to the survey and its purposes, and then elaborates on selected findings. (A complete report can be obtained by contacting the authors).

Background

In spring 1987, the Committee on the Future of Community Colleges in Maryland and the State Board for Community Colleges (SBCC) published *Blueprint for Quality*, a document which included a series of recommendations for strengthening the community college system. Recommendation 31 proposed that the SBCC, in cooperation with the community colleges, expand the existing statewide information system to include data about developmental students and their performance at the colleges.

In fall 1989, six community colleges participated in a pilot project to add selected data about developmental students to their annual report to SBCC on student characteristics. Several people involved with this pilot project expected that, because policies and practices at the colleges vary, this data would show considerable variability among the colleges. For example, the proportion of students identified as developmental might depend on the methods of testing and placing students, and the success of developmental students in the college program might depend on the proportion of these students who successfully complete the developmental activities at the college. To help make sense of these expected differences, the Developmental Education Association of Maryland (DEAM) proposed the survey which is described in this report.

The major purpose of DEAM's survey was to help interpret the new data (about assessment, placement, and enrollment in developmental courses) which will be added to the existing enrollment information system (EIS) for community colleges in fall 1990. Two other purposes of the survey were to provide information for members of DEAM who are examining the developmental programs at their own colleges and to identify areas in which developmental programs at Maryland community colleges are similar and areas in which they differ.

The questionnaire used in this survey was based on a survey distributed by the Southern Regional Education Board in summer 1989. Although the format of some of the questions on the SREB survey was somewhat inconsistent with the way data is maintained at many Maryland community colleges, this instrument was chosen for two reasons: the ease of reporting data which most colleges had already collected for the SREB survey and the chance to compare Maryland data with data collected by SREB. These advantages were expected to outweigh any difficulties created by the wording of the questions.

All of the community colleges in Maryland responded to the survey. Nineteen completed questionnaires were included in the analysis since the three campuses at Montgomery College provided separate responses.

(A note on terminology: "Developmental" in this paper refers to courses and programs intended to prepare students to perform college level work. Other terms which may be used to describe this type of preparatory work include remedial, compensatory, or basic skills. Because there is no general agreement on terminology, we followed the example of the national and state organizations (NADE and DEAM) and chose the term "developmental.")

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Assessment and Placement

All Maryland community colleges have written policies on the assessment of entering students' academic skills. At least some students at each college are required to be assessed in one or more of three subject areas: reading, writing, and math. Assessment does not necessarily mean testing; in some cases, students' academic skills are assessed by examining transcripts of their previous college work or by other methods. Most colleges decide whether to require assessment of a particular student on the basis of the number of credits the student takes and the specific courses or program the student plans to pursue.

Most colleges deal with students who avoid or refuse required assessment by prohibiting them from taking certain courses or prohibiting registration altogether. However, few colleges have on-line computer checks which would block the registration of a student who had not received required assessment.

Most community colleges in Maryland have a written policy to place students with low academic skills in developmental courses. The colleges differ in their placement tests: six different standardized tests are used for reading placement; writing samples, in-house tests, and four standardized tests are used for writing placement; in-house tests and three standardized tests are used for math placement. In spite of this diversity, the colleges are rather similar in the standards used to place students in developmental courses. At most colleges, developmental reading is required for students below the 40th percentile (community college norms) or a grade equivalent of 10.5 to 12. Developmental writing typically is required for students below the 50th percentile (community college norms). Because most colleges use in-house tests for math placement, placement standards for math could not be compared.

Although the standards for placing students in developmental courses appear to be similar among the community colleges, the proportion of students who are identified as needing developmental work varies from college to college. For example, one suburban college and one rural college use the same reading test and the same placement score. However, the suburban college identifies 46 percent of its entering students as needing remediation, while the rural college identifies only 14 percent of its entering students as needing remediation. Such a difference, in turn, influences the nature and size of the colleges' developmental programs.

If a student is placed in a developmental course, at most colleges the student is required to take that course. Twelve of the nineteen campuses restrict enrollment in courses in other disciplines (besides reading, writing, and math) for students who are placed in developmental courses.

Developmental Courses and Programs

Most colleges reported increases in enrollment in developmental courses over the last five years. Reasons given for enrollment growth included increases in total college enrollment, different tests, more testing, stricter placement policies, better enforcement of placement policies, increasing awareness of needs for developmental work, changes in graduation requirements, and changes in student population (older, less well prepared in high school).

Most colleges offer two or more levels of developmental work in each skill area (reading, writing, math). Developmental courses are offered by traditional academic departments, rather than by separate departments of basic skills, at most colleges. The majority of colleges require some type of exit test which all students must pass in order to successfully complete developmental work.

Developmental courses usually are offered for three credit hours, although no credit toward graduation is given. Most colleges count developmental courses toward a full-time load and report them on the transcript, although only a few colleges include the grades when computing the student's grade point average.

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The majority of instructors of developmental courses are part-time faculty. The percentages of full-time faculty were 33% for reading, 45% for writing, and 29% for math. However, in the future, it may be more useful to ask about the number of sections taught by full-time vs. part-time faculty instead of the number of individual faculty members, because a full-time faculty member typically teaches more sections than a part-time faculty member. It would also be helpful to be able to compare the proportions of full-time and part-time faculty for courses which are not developmental.

All community colleges conduct some kind of evaluation of their developmental courses and programs, and the majority of colleges do three or more of the following: evaluation by students, evaluation by faculty, studies of course effectiveness, studies of course completion rates, and studies of academic performance of students who have completed developmental work.

Developmental Program Outcomes

Obtaining comparable information on course completion and student retention rates proved to be more difficult than anticipated. The percentage of students who successfully completed developmental courses varied widely among and within colleges. The most striking example was a college which reported completion rates of 59% and 100% in two developmental reading courses and 20% and 63% in two developmental writing courses. Some of the differences among colleges may be due to definitions (for example, whether 'D' grades were considered as successful completion), but definitions cannot explain the differences within colleges. The difficulties experienced in gathering and interpreting data on course completion and retention rates suggest that the colleges may want to consider this topic further.

Developing useful comparisons on student retention was also troublesome. Only six of the nineteen colleges provided enough retention data to be included in the comparisons, and even among these six there were apparently differences in definitions. For example, some colleges reported retention data only for full-time students, some colleges only for degree-seeking students, and some colleges only for students tested at the college. As indicated in the table below, retention rates for all entering students (developmental and non-developmental) were about 30 points higher for full-time students than for part-time students and about 20 points higher for fall-to-spring than for fall-to-fall.

Median Retention Rates for All Entering Students

	All Students	Full-time	Part-time
Fall 1988 to Spring 1989	58%	80%	43%
Fall 1988 to Fall 1989	39%	55%	29%

Surprisingly, retention rates at the colleges providing data were generally similar for students who were identified as needing developmental work and for students who were not so identified. Retention rates were highest (above 80%) for students who successfully completed at least one developmental course, but they may be equally high for students who successfully completed at least one credit (non-developmental) course. The data needed to make this comparison were not collected.

Concluding Comments

The State Board for Community Colleges conducted a survey on developmental education in Maryland in 1984. Compared to the results of that survey, the 1989 DEAM survey showed that more community colleges now have policies on assessment and placement, require developmental work for students who need it, evaluate their developmental programs regularly, and can produce data on such topics as faculty, course characteristics, student enrollment, and course completion rates.

Almost half of the community colleges provided unsolicited comments about anticipated changes in developmental courses

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and policies, such as beginning mandatory placement, changing placement tests or scores, restructuring programs, adopting exit tests, and improving systems for collecting data. It may be helpful to repeat a survey such as this in two or three years to see what changes have occurred, especially if the survey results prove useful in interpreting data which will be reported to SBCC as part of the enrollment information system in fall 1990.

Although the value of using the survey findings to help interpret the new information on the enrollment information system cannot be determined until after SBCC collects and analyzes the data, it appears that several topics addressed in this survey may be relevant. These include policies for assessing and placing students, placement tests used, proportion of students who are identified as needing developmental work, and proportion of students who pass developmental courses. Three questions which merit further attention are: (1) norming information on placement tests, (2) standards for successfully completing developmental courses, and (3) retention rates for non-developmental students who completed at least one course.

Deriving the questionnaire from the Southern Regional Education Board survey did not appear to make participation easier for the colleges. Although the SREB questions yielded interesting results, the major goal of the project – to help interpret data collected by SBCC – may be better accomplished with a questionnaire specifically designed for that purpose.

A number of developmental educators from four-year colleges and universities have expressed interest in this survey. If the survey is repeated, the four-year colleges and universities should be invited to participate both in developing the questionnaire and in providing data. This would provide a more complete picture of developmental programs in Maryland which should be helpful to all the colleges.

Informal knowledge of the practices at the colleges suggests that some policies reported by the colleges in the survey responses are not fully enforced. In addition, many colleges had difficulty reporting technical information such as percentile norms for cut-off scores and retention rates. One outcome of this survey may be to encourage faculty and administrators who work with developmental programs to discuss and address such matters.

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